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Nielsen, Stine Maria Louring; Mullins, Michael Finbarr

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Beyond the dichotomy of figurative and abstract art in hospitals: the potential of visual art as a generator of well-being

Stine Maria Louring Nielsen

Department of Architecture Design and Media Technology, Aalborg
University
stm@create.aau.dk

Michael Finbarr Mullins

Department of Architecture Design and Media Technology, Aalborg
University
mullins@create.aau.dk

Abstract

Within the evidence-based design discourse, and deriving particularly from the theory of emotional congruence, abstract art has been indicated as unsuitable for hospitals. As patients may often experience unfamiliarity, vulnerability, stress, unpredictability and uneasiness in hospitals, these negative factors in terms of patients' well-being are predicted to be detrimentally reinforced by abstract art, but alleviated by particular forms of figurative art. The present paper focuses particularly on this question of the suitability of abstract art in Danish hospital settings and presents findings from two experimental case studies on 98 patients' well-being in relation to their experience and use of visual art during hospitalization.

The case studies employed a mixed-method approach, including interviews and observations informed by thermal video recording, surveys and psychophysiological experiments.

Six experiential domains are employed to understand the notion of experience of 'well-being': Space, Time, Inter-subjectivity, Body, Mood and Personal identity.

The hypothesis that the ambiguity of abstract art leads to stressful effects is not confirmed by the study's findings. The studies are developed to qualify current guidelines for the application of art, which emphasize a dichotomy between figurative and abstract art. While confirming the positive effects of figurative art, the studies indicate that the ambiguity of meaning in abstract compositions can also facilitate patients' memories, thoughts and feelings, addressed as experiential domains of well-being.

Keywords: health environment, healing arts, well-being, phenomenology, mixed-methods

Background

Studies on the effects of hospital environments on quantifiable patient health-outcomes, often leave patients' experience of well-being under-examined. Research framed within physiological and/or psychological perspectives, has applied theories such as *biophilia* (Wilson, 1984), *distraction* (McCaul & Malott, 1984) and *emotional congruence* (Bower, 1981; Singer & Salovey, 1988). Deriving particularly from the theory of *emotional congruence*, abstract art has been indicated as unsuitable in hospitals (Ulrich & Gilpin, 2003). This stance is motivated on the grounds that the ambiguity of meaning in abstract art is too open-ended for patients to interpret. As empirical studies in patients' experience of hospital environments have found states of unfamiliarity, vulnerability, stress, unpredictability and uneasiness (Nielsen et al. 2016; Terkildsen, 2007; Timmermann, 2014), the logical conclusions drawn from studies of this nature are that these factors will promote the projection of negative states of mind and mood onto abstract art (Ulrich, 2009; Ulrich & Gilpin, 2003).

It has been argued for many years that the context of nursing care plays a significant role in relation to patients' well-being (Birkelund, 2011; Martinsen, 2006; Rogers, 1970; Watson, 1985). However more recent studies in the field of well-being indicate a shift towards including considerations on how identifiable factors in the physical hospital environment may also effect patients' experience of well-being, relief and positive emotions (Bauger & Bongaardt, 2016; Olausson, Lindahl, & Ekebergh, 2013; Timmermann & Uhrenfeldt, 2015). It is within this research focus that this paper is situated, where artworks are considered as an affective part of the physical environment and as an element towards the experience of well-being.

Introduction

The paper draws from a number of experiments in the laboratory and natural settings of healthcare environments carried out in the period 2015-2016 under the title "The Potential of Art in Hospitals". Drawing from these studies, this paper will focus particularly on the question of the suitability of abstract art in Danish hospital settings. Based on results of two experimental case studies on patients' experiences and uses of visual art during hospitalization, we seek to develop the language of discourse of art as a potential generator of well-being in hospitals. We will argue that rather than being rooted in the dichotomy between figurative and abstract art, as current guidelines recommend, art and art strategies for hospitals can be informed by concepts such as Space, Time, Inter-subjectivity, Body, Mood and Personal identity and be used as an integrated tool for healing.

Theoretical Framework

Framed by an overall phenomenological approach, the study approaches the notion of 'being well' and how patients use and experience art during hospitalization (Heidegger, 1962; Ingold, 2000). The understanding of well-being is further inspired by recent theories of the concept as an experiential phenomenon articulated within a multiplicity of possible states of being (Galvin and Todres, 2011). Departing from these ideas, six experiential domains are deployed, which allow well-being to be understood as a phenomenon that can be experienced spatially, temporally, inter-subjectively, bodily, in mood, and in terms of the experience of personal identity.

Method

The paper presents findings from two experimental case studies on patients' well-being in relation to their experience and use of visual art during hospitalization. The case studies employed a mixed-method approach, including interviews and observations informed by thermal video recording, surveys and psychophysiological experiments (Baceviciute et al., 2016; Folmer & Nielsen, 2016; Nielsen et al., 2016).

Settings

The two qualitative experimental case studies were carried out in 2015 (spring/autumn) in the natural environment of two hospitals.

The first case study (case study 1) was carried out in the dayrooms of five medical wards in Jutland, Denmark (Sygehus Vendsyssel, Hjørring): specifically, wards for 1. Cardiac patients, 2. Elderly medical patients, 3. Lung patients, 4. Gastro patients, and 5. General internal medicine patients. The dayrooms were primarily used by patients who wanted a change of scene from their shared patient room in the ward. Here they could read, watch television, eat their meals and socialise with co-patients or relatives. In general, patients were hospitalized here for between 1-3 days.

The subsequent case study (case study 2) was carried out in fourteen single-bed patient rooms of two interrelated wards in one hospital in the Zeeland area of Denmark (Regional Hospital, Glostrup). The wards were located on the same floor of the hospital. A common group of staff treated and monitored the patients with respiratory distress of various kinds. During hospitalization, patients rarely left their patient rooms, which was used for sleeping, eating, reading, socialisation, examinations etc. Each room had its own private bathroom. In general, patients were hospitalized here for between 1-2 days.

Participants

Thirty hospitalized patients situated in case study 1 and sixty-eight patients in case study 2 were interviewed, while a larger sample was observed.

In general, the interviewed patients in case studies 1 and 2 shared some basic social, cultural and physical characteristics. All participants in case study 1 lived in the northern part of Jutland; the thirty interviewed patients were aged 62 on average, ranging in age from 41 – 91 (cf. Table 1). The participants were predominantly married with children and trained in tradecrafts or agricultural work. All participants were physically mobile and appeared cognitively clear-headed, with the exception of one patient. All observed participants were adult patients ranging from approximately 20 - 90 years, appearing with the same physical and cognitive states as most of the interviewed patients.

Table 1. Interviewed patients – Case study 1

Patient no.	Ward no.*	Gender	Age	Place for interview	Interview duration
Week 1					
1	1	Male	50	Dayroom	25.21
2	1	Male	54	Patient room	29.55
3	1	Male	62	Dayroom	23.58
4	3	Male	64	Dayroom	19.20
5	1	Male	83	Patient room	32.00
6	1	Female	57	Dayroom	16.54
7	4	Male	65	Patient room	43.17
8	4	Female	46	Patient room	26.01
9	4	Female	50	Patient room	33.40
10	1	Female	61	Patient room	18.09
11	3	Female	63	Patient room	21.03
12	1	Male	52	Patient room	33.44
13	1	Male	53	Dayroom	13.29
14	1	Male	68	Patient room	12.20
15	4	Female	76	Patient room	32.09
Week 2					
16	1	Female	63	Dayroom	24.30
17	1	Male	75	Dayroom	16.19
18	4	Male	52	Dayroom	16.34
19	3	Male	64	Dayroom	19.29
20	4	Female	61	Dayroom	27.07
21	1	Male	52	Dayroom	19.47
22	2	Male	91	Dayroom	08.14
23	1	Female	68	Dayroom	21.14
24	1	Female	86	Patient room	25.31
25	1	Male	72	Patient room	42.36
26	1	Male	41	Dayroom	16.57
27	5	Female	53	Dayroom	15.30
28	4	Female	68	Dayroom	24.01
29	3	Male	63	Patient room	30.28
30	1	Female	58	Dayroom	22.35

* Ward and patient type: 1. Cardiac patients - 2. Elderly medical patients - 3. Lung patients - 4. Gastro patients - 5. General internal medicine.

Generally, patients in case study 2 were hospitalized in one of the two wards in order to monitor their respiratory distress. A questionnaire carried out during case study 2 (Folmer & Nielsen, 2016) shows that almost 80% of the patients had a tertiary or secondary education. 60% were married or in a

relationship and 40% were single. Most of the patients suffered from complex apnea (40%) and 12% suffered from post-polio effects. The rest suffered from other respiratory implications such as ALS, KOL and the Cheynes-Stokes condition. For most of the patients, it was not their first visit to the particular ward under study (98%); 40% of the patients had been hospitalized more than 10 times before. On this note, participating patients from this study were experienced visitors of the hospital. The exact distribution of interviewed patients on ward and gender is showed in Table 2.

Table 2. Interviewed patients – Case study 2

Ward	No	Gender	No
A	19	Male	45
B	49	Female	23
In total	68	In total	68

We not taken any further consideration to the diagnostic background of the patients involved in the experiment.

Procedure

Case study 1 included an initial user-oriented study, which ranked twenty paintings (Nielsen et al., in press). This was followed by an experiment using the four most and the one least popular (ranked) paintings, and which were mainly figurative in nature, in the dayrooms of the five medical wards. Fieldwork was done in the comparative dayrooms, over a two-week period. During the first week, dayrooms were configured without the presence of art; in the second week they were configured with the selected five artworks. Thirty semi-structured interviews were carried out with patients – fifteen each week (cf. Table 1.). Observations, participant observations and informal conversations were carried out in all five dayrooms. Thermal cameras monitored the usage, patient occupation and flow in two of the dayrooms to inform qualitative research and reduce bias.



Figure 1. Bare white back wall in patients' dayroom, week 1 – Case study 1



Figure 2. Painting being hung up on back wall in patients' dayroom, week 2 – Case study 1

Case study 2 employed ten posters/reproductions of visual art, of which nine were of an abstract character, in the fourteen single-bed patient rooms for respiratory distress. Interviews of sixty-eight hospitalized patients were collected in the patient rooms over the duration of a month (September 2015). A survey of forty-nine patients and a psychophysiological EEG- and eye-tracking experiment of thirty test participants was carried out to inform qualitative research and reduce bias.



Figure 3. Posters of visual art situated in single-bedded patient rooms – Case study 2

All qualitative data in terms of interviews and observations were collected by one and the same researcher, trained as an anthropologist.

Analysis

Qualitative Data

The appliance of semi-structured interviews allowed the participants to reflect and open up for individual experiences, emotions and thoughts (Rubow, 2003; Spradley, 1979). Informal conversations were continuously included, thereby informing the pre-prepared guide for the questionnaires (DeWalt 2002). All interviews were transcribed and carefully coded in Nvivo software for themes and categorized into more general topics following a iterative-inductive research approach (O'Reilly, 2012). Inspired by earlier qualitative studies on patient well-being (Olausson et al., 2013), an initial "bridled" reading of the transcriptions was carried out in order to understand the text on its own terms. The coding of data was then discussed in the research group and guided by themes from earlier qualitative studies on patients' well-being in relation to physical surroundings in healthcare settings (Nielsen, 2013; Timmermann, 2014), studies on art in hospitals (Nanda et al. 2011; Ulrich and Gilpin 2003) and methods for conceptualisation and perception of art (Arnheim, 1954; de Botton & Armstrong, 2013), to ensure inter-coder reliability and relate coding to the general language of the field of study.

Quantitative Data

Thermal cameras (which do not record identifiable features of the informants) were mounted in the dayrooms to record heat radiation from people within the recording frame. White areas in the recordings represented the hottest and black the coldest areas of the frame. The video was processed in a specially designed computer program that detects areas of heat. This detection is made in each frame of the video, i.e. 15 times per second in our case. A new image for each pixel (position in the image) is recorded as 0 if there is found to be a person in the current frame or a 1 if there is not. These records were compiled over 24 hour periods. Thus, the highest number on the image is found where people are more frequently detected. For visualization every result was scaled for each day so that the highest number displayed as white and 0 displayed as black. All figures in between were scaled linearly in tones of grey (cf. Figure 4).



Figure 4: Scaled image of thermal camera recording in dayroom - Case study 1

A psychophysiological experiment was performed in The Augmented Cognition Lab at Aalborg University Copenhagen. The experiment was made up of an EEG and eye-tracking test that monitored brain activity among 30 subjects, divided into 20 men and 10 women with an average age of 24.6 years. Test subjects were presented to the 10 art posters of the main experiment, as well as 40 other works of art on a screen for 40 seconds. The test subjects were then asked to consider the various works. After another 5 seconds, they were presented with a new work (cf. Figure 5).

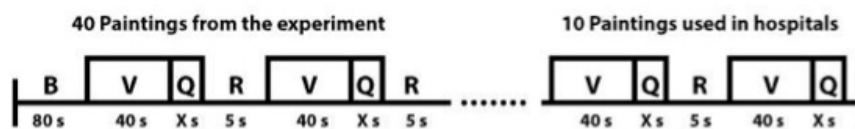


Figure 5. Experimental sequence: B – Baseline; V – Viewing of the images; Q – Questionnaire, R -Rest – Case study 2.

Each experiment session took about 90 minutes to complete, where test subjects were asked to rate their aesthetic experience of each work from categories: pleasant, unpleasant, neutral, and whether they had seen the work before (Baceviciute et al., 2016).

Results

As shown in Table 3., coding of qualitative data from interviews in case study 1 and 2 showed the potential of visual art to address and put into play patients' notions of well-being in the six experiential domains of Space, Time, Inter-subjectivity, Body, Mood and Personal identity (Galvin & Todres, 2011).

Table 3. Extracts of qualitative data on patients' experience of well-being in case study 1 and 2, coded in relation to Galvin and Todres' six experiential domains of well-being (Galvin & Todres, 2011).

Patient Quote	Experiential Domain of Well-being	Case Study no.
A. <i>It makes a difference that the walls are covered with art... otherwise it's just all white and un-cosy. It puts you in a more comfortable mood when you are hospitalized. It's like there is something to look at... and something to build on. Something you can sit and talk about and take home with you...</i>	Space Mood Personal identity Inter-subjectivity	1
<i>It's different with this all-white room... you may as well stay in a snow cave - here is nothing to relate to and it feels very cold.</i>	Space Personal identity Body Mood	1
B. <i>It's a funny one that one (painting)... I look at it every day... one always finds something new. I noticed... the small people in the middle and behind the statue... And then there are also the whales on the right side of the boat over there. There once was a boat sailing from Copenhagen to Aalborg... you can easily make some stories out of this painting... in my younger days we caught the big tunas in Øresund that pulled up to spawn in the Baltic Sea... I fished for 10 years you know...</i>	Time Personal identity Inter-subjectivity	1
<i>It is great to have something else to look at, when you have finished counting all the dots in the ceiling... when you've been here for a week, you can easily get a sort of cabin fever...</i>	Mood Space Time	1
C. <i>I like being able to lose myself in art for a while (...) This is like the surface of the moon peeking out. You can see a feather there... and a palm tree... I am from Hawaii... So you can see palm trees and grass. It is just your imagination (that defines) what you can find. That's what I like. You have no idea what the artist was thinking while making it, so you can make your own story.</i>	Time Personal identity	2
D. <i>It's really nice that it's here (the artwork) ... It lives up in a way. For me it's just squiggles, but it's nice that it's here instead of just white walls. Colours give a different whim... It also means that you can sit and take a look at it and zone out... Yesterday I sat in the bed and knitted and looked at it a bit... I just sat and dozed and dreamed of something else... it gave me a little peace... it was also the first impression I had when I came into the room - that it included art and had a lovely atmosphere.</i>	Space Body Mood Time	2
E. <i>I've also been looking for motives in the picture ... I've spent a little time on it ... It exudes a warmth when there are colours. When I arrived I first saw the wires over there and then I looks over here and saw the combination of all the colours... And then the forest and canola fields came to me... I immediately came to think of it. At our home we have a lot of these types of fields... It infuses such peace...</i>	Time Body Mood Space Personal identity Inter-subjectivity	2

Interestingly, the potential of art to infuse a sense of well-being in patients was not indicated to be dependent on whether the art was experienced and/or used by patients in the hospital environment of the five dayrooms in case study 1 or the fourteen single-bedded patient rooms in case study 2. Thus, all six experiential domains of well-being were traced in case study 1 as well as in case study 2 (cf. a comparison of patient quote A-D and E-G in Table 3.).

In this regard, art and well-being was not significantly related to the artwork being figurative or abstract. Patients in both case study 1 (which comprised mostly figurative compositions) and case study 2 (comprising predominately abstract compositions) experienced the potential of the art to address well-being in all six different experiential domains (cf. a comparison of patient quote A-D and E-G in Table 3.).

Due to a small data set and the distribution of abstract and figurative art in case study 1, findings from thermal cameras did not significantly inform data analysis on the topic of the potential of abstract vs. figurative art. However, findings from the psychophysiological experiment supported the qualitative findings of case study 1 and 2, by showing that the liking or disliking of art was not significantly related to it being abstract or figurative (Baceviciute et al., 2016). Furthermore, the results of the psychophysiological experiment showed the viewing of abstract art to involve less demanding information retrieval, memory-related cognitive processes and less mental engagement by test subjects than the figurative (Baceviciute et al., 2016).

It is therefore concluded from these studies that abstract art has the potential to induce well-being in hospitalized patients. The notion that the ambiguity of abstract art generally leads to stressful effects was thus called into question by these findings. Furthermore, the qualitative studies indicate the potential of art to infuse a state of well-being by eliciting patients' ability to reminisce in their interaction with the artworks – regardless of these being figurative or abstract (cf. especially patient quote C, E and G in Table 3.).

Discussion

From the results of the study, the subject of art in hospitals is expanded beyond its potential as a tool for positive distraction from pain, discomfort and stress, to include its potential to infuse an overall notion of well-being in hospitalized patients. The results stage the patient and his/her prior experiences at the core of appliance and selection of art for hospitals.

The studies qualify current guidelines for the application of art, which build on *emotional congruence theory* and which emphasise a dichotomy between figurative and abstract art (Ulrich & Gilpin, 2003). While confirming the positive potential effects of figurative art, our studies show that the ambiguity of meaning in abstract compositions can also induce relaxation and facilitate patients' memories, thoughts and feelings, addressed as experiential domains of well-being.

On the further development and application of combining the mixed methods of our study, we recommend camera recordings over a longer period of time and in contexts with a higher flow and use of space, to make the findings from this method more applicable. Moreover, more tailored-to-context studies of art in hospitals are required in future natural experiments relevant to this field of study, where qualitative studies of patients can include persona analysis and personality tests.

The natural experiment design employed includes the danger of confounding and uncontrollable factors, which may influence the results. However, the patient behaviour studied reflects a very high ecological validity, as it occurs in non-laboratory, true to life settings. It is possible that the patients of the case study have been more positively primed than a broader population of patients and than the patients addressed in former guidelines on healing arts (Ulrich, 2009). The study context of patients with relatively short hospital stays (1-3 days); extensive experience of hospitalisation; and the mainly monitoring of illness rather its diagnosis and/or treatment, sets the scene for less vulnerable, healthier, mobile, active and socializing patients.

Nevertheless, these types of patients are part of the everyday hospital environment and of a type, which may be anticipated to proportionately increase in the future, through various measures introduced by Danish healthcare to cut down hospitalisation time and the encouragement of outpatient treatment. While this reflects the limited focus of the study on a certain type of patient within the complex environment of the hospital, the study lead to the collection of large amounts of data toward more in-depth reflections of well-being. Studies are still needed on the potential effects of art on seriously ill patients hospitalized over a longer period. These studies will need to be designed with the illness of patients in mind, where their level of frailty requires interventions that are more sensitive.

The findings point to the need for a reflective exploration of the methods and theories applied in the study of evidence-based art in hospitals, in terms of qualifying the understanding of patients' experiences and uses of art in hospitals.

Conclusion

The potential of visual art to address and put into play patients' sense of space, time, inter-subjectivity, body, mood and identity were confirmed in the data analysis. Results show how patients' overall experiences and uses of art during hospitalization act as a generator of well-being in the hospital environment, regardless of whether the art is of a figurative or abstract nature. The findings thus encourage a discourse beyond the dichotomy of figurative and abstract art in hospitals and argue for a less prejudiced approach to the matter.

Within this framework, practitioners and decision-takers may find new directions for patients' satisfaction with healthcare services that include an understanding of the existential level of well-being of patients. Furthermore, the findings support the integration of visual art as an integrated tool for healing in hospitals.

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